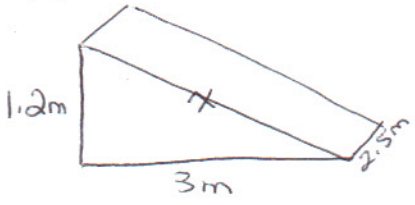
7. A ramp shaped like a triangular prism is 2.5 meters wide, and reaches a loading dock 1.2 meters high. The ramp starts 3 meters from the dock. All sides of the ramp are to be covered with pressure-treated plywood. Calculate the amount of plywood sheathing required to cover the ramp?

[4]



$x^2 = 1.2^2 + 3^2$

$= 1.44 + 9$

$= 10.44$

$x = \sqrt{10.44}$

$x = 3.23\text{m}$

Areas

front & back Δ's: $\frac{bh}{2} = \frac{(3)(1.2)}{2} = 1.8$

bottom: $3 \times 2.5 = 7.5$

slant: $3.23 \times 2.5 = 8.075$

side: $1.2 \times 2.5 = 3$

total area: $1.8 + 1.8 + 7.5 + 8.075 + 3$

$= 22.175\text{m}^2$

8. A birthday gift is 55 cm, 40 cm wide, and 5 cm high. The sheet of paper you want to use to wrap it measures 75 cm by 100 cm, is the paper large enough to wrap the gift? Justify your answer.

[5]

Surface Area of gift:

$55 \times 40 \times 2 = 4400$

$55 \times 5 \times 2 = 550$

$40 \times 5 \times 2 = 400$

Total $= 5350\text{cm}^2$

Area of paper:

75×100

$= 7500\text{cm}^2$

Since the area of the paper is larger than the surface area of the gift, the paper is large enough to wrap the gift.